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we have no intermediate stages. But the discovery of less progressive and specialized descendants of Paleocene Holarctic animals in the African Oligocene would lend support to this conjecture. Unfortunately, *Metoldobotes* is referable to a group of disputed affinities in which the dentition is a treacherous and uncertain guide, the reviewer feels obliged to accept the reference with reserve; but it is well to point out its significance if confirmed.

The rodent genera described by Osborn are regarded by Schlosser as obviously related to *Theridomys* and *Trechomys* of the European Eocene and Oligocene, the relationship being confirmed by the discovery of an upper jaw. (Osborn compared the originals with specimens of these and other European genera, mostly identified by Dr. Schlosser, expecting to find the affinities close; but the most that the evidence warrants is that they probably belong to the same family. There are genera of several other families of rodents which approach the Theridomyid pattern and dentition as closely as do *Phiomys* and *Metaphiomys* of the Fayûm.)

The foregoing review may appear perhaps unduly critical. But there is an increasing tendency in scientific work towards an uncritical acceptance of the views and conclusions set forth in the work of special research. It becomes peculiarly incumbent, therefore, on those who are engaged in such work to avoid over-positive statements or conclusions based upon inadequate evidence.

Conservative statement and open-mindedness are essential to the permanence of scientific theory. And from Dr. Schlosser, who is justly regarded as one of the greatest living authorities upon Tertiary mammals, we may fairly demand an exceptional degree of conservatism.

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THE OPHIDIAN GENUS GRAYIA

Dr. C. B. Davenport,[1] writing on the imperfection of dominance, has recently remarked that "the weakened character may be retarded in development so that it fails to appear at the normal period but develops later. Thus Lang found hybrids between red and non-red snails to be at first non-red but finally red.[2] Some authors have spoken of this as *reversal of domi-*

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[1] *American Breeders' Magazine*, Vol. 1, p. 40.

[2] *Helix nemoralis* var. *libellulo-rubella;* cf. Taylor, "Monog. L. & F. W. Moll. British Is.," part 17, p. 304.

nance, and even Bateson uses this terminology in his latest book. But this is obviously an unfortunate term if dominance means the presence of a quality. For, a given quality, that is due to the absence of a factor, like blue iris [of the eye] color, can not be at one time recessive and at another dominant. If a blue iris appears where brown is expected, the clear reason is that brown pigment has merely failed to develop and is potentially present. A similar case occurs in hybrids between albino and some buff birds; the chicks have a pure white down, only later acquiring the black and buff of the adult plumage.''

Dr. G. A. Boulenger[3] has recently published a very interesting paper on *Grayia,* a genus of African snakes, in one of which the pattern of the young appears to be completely reversed in the adult. In the young of *Grayia ornata* (Bocage) var. *furcata* (Mocquard) the body is black, with broad whitish or greyish cross-bands, which bifurcate below on each side, so that in lateral view the snake is ornamented with a series of reversed Y's Each Y is slightly speckled with black about the middle line. As the animal grows, the black ground-color gradually changes to grey or brown, owing I suppose to the increase in size without any corresponding increase in pigment-production. The Y's, on the other hand, show more and more black, until they have only a light edge, while in the adult even this disappears, and we have then a series of perfectly *black* markings on a grey ground, in place of similar *light* markings on a black ground. This case is curiously suggestive of those cited by Dr. Davenport, and also interesting as showing that the black markings of the adult are not simply superimposed over the grey or brown, but occupy an area which, but for the black would be pale. This reminds one of the case of the English poppy, which has black spots on red petals, but when the black drops out, as in the Shirley variety, *white* spots appear. The condition found in the snake can hardly be explained by the simple proposition that the animals are heterozygous for the color of the markings, the black being dominant. In this case, we ought apparently to find a certain proportion of recessives, which would retain light Y's to the last. Possibly such occur, but have not been recorded. It seems more likely, however, that tardy development of a pure character here simulates the behavior frequently found in crosses. Incidentally, we may note also the suggestiveness of the case in relation to the development of ocelli.

T. D. A. COCKERELL.

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[3] *Proc. Zoological Soc. London,* 1909, pp. 944–952.